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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/553,970	04/21/2000	Sai V. Allavaru	5181-48500	6561

7590 05/05/2003

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EXAMINER

GUBIOTTI, MATTHEW P

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 05/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/553,970

Applicant(s)

ALLAVARPU ET AL.

Examiner

Matthew Gubiotti

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed February 12, 2002 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because it merely lists a series of co-pending applications, but has not been submitted per the requirements of 37 CFR 1.98(1)(2)(iii). It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

Specification

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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2. Claims 8, 29 and 51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "plurality of languages" is not sufficiently descriptive to describe the purposed limitation. It is unclear from the specification how to apply the term "plurality of languages" as it relates to the debug output.

3. Claims 16, 38, and 59 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites that the "remote control service" and the "multi-thread application" are executable on the "client computer system". Claim 16 recites that the management of the multi-thread application is controlled by the remote control service "remotely". A service executable on a system to operate on an application also residing on that system cannot by said to manage that application remotely. Clarification or correction is required.

4. Claims 21, 43 and 64 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter

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which applicant regards as the invention. Claim 21 recites the limitation "remote source" in Line 1. There is insufficient antecedent basis for this limitation in the claim. The term has been further treated below as reading "external source".

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-7, 9-17, 20 and 21; 22-28, 30-39, 42 and 43; and 44-50, 52-60, 63 and 64 are rejected under 35 U.S.C. 102(e) as being anticipated by Wygodny (U.S. Pat. No. 6,282,701).

Claim 1

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Wygodny teaches a system for thread-safe debugging substantially as claimed ("BugTrapperTM") comprising:

A thread-safe debug service executable on a client system to provide debug services to debug a multi-threaded application (col.3, li.20-23, 27-30); and

A thread-safe remote control service ("agent") executable on the client system to receive control requests from an external source to initiate and manage the debug services on the client system after the initiation of the multi-threaded application (col.3, li.30-38).

Claim 2

Wygodny also teaches a debug print function, operable independently of the remote control service to provide debug output for one or more threads of the multi-threaded application (col.5, li.46-50) such that the output of each of the threads remains distinct from the output from the other threads (col.9, li.5-9 and 40-44; fig.3A&B).

Claims 3-7

Wygodny also teaches directing the debug output to an output target comprising a file ("trace file"; col.3, li.33-38), a standard output terminal ("display screen"; col.3, li.13-18), or a recipient computer system with a plurality of remote diagnostic tools ("analyzer"; col.3, li.33-44).

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Claim 9

Wygodny further teaches wherein the remote control service ("agent") is operable to begin and end debugging after initiation of the multi-threaded application (See Fig.1B) (illustrating the agent providing commands [e.g. start/stop trace] to the application) (See also col.6, li.1-3).

Claim 10

Wygodny further teaches wherein the debug service comprises one or more debug objects, each corresponding to a component of the multi-threaded application, wherein each debug object is operable to provide debug services to the corresponding component of the multi-threaded application (col.14, li.13-24; fig.6, ref.602).

Claims 11 and 12

Wygodny further teaches wherein the remote control service allows a remote source to switch the debug services on and off ("selecting or deselecting a checkbox") for a set of components by referencing debug objects by name (col.14, 40-42; fig.5, ref.502) or by specifying a pattern to select a set of debug objects by name (col.2, li.59 to col.3, li.4) (discussing the specification of a custom TCI file to pattern the debug service performed).

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Claims 13 and 14

Wygodny further teaches wherein the debug services comprise a service to list a state for all the debug objects in a multi-threaded application (col. 14, li.13-24; fig.6, ref.602).

Claims 15 and 17

Wygodny further teaches wherein the debug services comprise a service to profile and trace program execution of the multi-threaded application (col.4, li.43-50).

Claim 20

Wygodny further teaches wherein the debug services comprise a service to log performance information on the execution of the multi-threaded application (col.17, li.66 to col.18, li.6).

Claim 21

Wygodny further teaches wherein the remote source comprises a third party application ("analyzer") executing on a remote computer system, wherein the remote computer system is coupled to the client computer system over a network (col.3, li.27-33) (regarding the sending of the agent from the remote computer system to the client computer system).

Claims 22-28, 30-39, 42 and 43

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These claims represent the method executed by the system disclosed in claims 1-7, 9-17, 20 and 21, respectively. They are rejected for the same reasons as outlined above.

Claims 44-50, 52-60, 63 and 64

These claims represent the medium element of the system disclosed in claims 1-7, 9-17, 20 and 21, respectively. They are rejected for the same reasons as outlined above.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 8, 29 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wygodny (U.S. Pat. No. 6,282,701), as applied to Claims 2, 23 and 45 above, respectively.

Claim 8

Wygodny teaches the debug output in the C++ language, through use of an illustrative example (col.4, li.24-26; fig.11). Wygodny does not expressly teach that the debug output may be presented in other languages. At the time of the

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invention, it would have been obvious to one of ordinary skill in the art to apply the system of Wygodny to multi-thread applications written in other languages. The modification would have been obvious because one of ordinary skill would have been motivated to apply the system to applications written in any number of languages to produce useful debug output to achieve the isolation of specific threads, as taught by Wygodny (col.2, li.51-56)

Claims 29

This claim represents the method executed by the system disclosed in claim 8. It is rejected for the same reason as outlined above.

Claims 51

These claims represent the medium element of the system disclosed in claims 1-7, 9-17, 20 and 21, respectively. They are rejected for the same reasons as outlined above.

9. Claims 18 and 19, 40 and 41, and 61 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wygodny as applied to claim 1, 22 and 44 above, respectively, and further in view of Kaler (U.S. Pat. No. 6,467,052).

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Claims 18 and 19

Wygodny teaches a service to log performance information on the execution of the multi-threaded application (col.17, li.66 to col.18, li.6). Wygodny does not expressly teach the collection and logging of run-time statistics of the application. In the analogous art of computer performance analysis, Kaler teaches the collection and logging of run-time statistics of an application (col.35, li.49 to cl.36, li.4; fig.16). At the time of the invention, it would have been obvious to one of ordinary skill in the art to apply the run-time collection and logging of statistics taught by Kaler in the system of Wygodny. The modification would have been obvious because one of ordinary skill would have been motivated to apply to mathematically quantify the performance of isolated threads in a multi-thread application to optimize system performance, as suggested by both Wygodny (col.1, li.36-42; col.2, li.51-53) and Kaler (col.3, li.31-39).

Claims 40 and 41

These claims represent the method executed by the system disclosed in claims 18 and 19, respectively. They are rejected for the same reasons as outlined above.

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Claims 61 and 62

These claims represent the medium element of the system disclosed in claims 18 and 19, respectively. They are rejected for the same reasons as outlined above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew Gubiotti whose telephone number is (703) 305-8285. The examiner can normally be reached on M-F, 8-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703) 305-9662. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

MPG
April 30, 2003


TUAN Q. DAM
PRIMARY EXAMINER